

**REMARKS**

Reconsideration and allowance of the claims is respectfully requested in view of the following remarks. The Examiner's attention is directed to the telephone interview conducted on April 16, 2003. Discussion focused on the primary cited reference U.S. Patent 6,266,576 to Okada et al. Distinctions were identified to the Examiner between Okada et al. and the claimed invention. The Examiner was not persuaded. The Examiner was queried as to the justifications for the inherency rejections provided with the Final Office action. No satisfactory conclusion was reached. All claims were discussed.

**1. THE REAL PARTY IN INTEREST**

The real party in interest in this application is Delphi Technologies, Inc. Ownership by Delphi Technologies, Inc. is established by assignment document recorded for this application on February 07, 2001, on Reel 011570 Frame 0824.

**2. RELATED APPEALS AND INTERFERENCES**

Applicants know of no related patent applications or patents under any appeal or interference proceeding.

**3. STATUS OF CLAIMS**

Currently, Claims 1 - 28 and 31 - 56 are pending. The Examiner has rejected Claims 1 - 28 and 31 - 42 as anticipated under 35 U.S.C. §102(e) by Okada et al., U.S. Patent No. 6,266,576. The Examiner has rejected Claim 43 - 56 as unpatentable under 35 U.S.C. §103(a) as being unpatentable over Okada et al., U.S. Patent No. 6,266,576.

4. STATUS OF AMENDMENTS

The only amendment has been the cancellation of Claims 29 and 30, which has been entered.

5. ISSUES

There are three issues, which are related. First, whether the Examiner's rejection of Claims 1 -- 29, and 31 -- 46 under 35 U.S.C. §102(e) as anticipated by Okada et al. U.S. Patent No. 6,266,576 is improper. Second, whether the Examiner's rejection of Claim 43 - 56 as unpatentable under 35 U.S.C. §103(a) over Okada et al, U.S. Patent No. 6,266,576 is improper. Third, whether the Examiner's justification for the above rejections based on inherency is improper.

6. ARGUMENT

A. Claims 1 -- 28 and 31 - 42 are not anticipated by Okada et al.

Claims 1 -- 28 and 31 - 42 stand rejected under 35 U.S.C. §102(e) as being anticipated by Okada et al. (U.S. Patent 6,266,576). The Office Action explanation relies on the rejection in the first office action and suggests that:

"Okada et al. disclose a fuel cell system. The system includes a hydrogen supply means having a reformer, a variable valve (10) for regulating the amount of methanol supplied to the reformer (9), and a pressure regulator (11) for maintaining the pressure of hydrogen supplied from the reformer to the fuel cell (5) at a constant pressure, and a reservoir tank (12) for storing hydrogen to be supplied to the fuel cell. The fuel cell system includes an electric generation managing means (7), which is a control system. As shown in Figure 1, the reservoir tank 12 is in fluid communication with the reformer, and therefore the pressure of the reservoir tank and the reformer will be identical. (Column 8, lines 36-48.)

The electric generation managing means controls the system processes, which maintain pressure in the reservoir at a target pressure. The electric generation managing means detects the pressure of the reservoir tank and reformer, and uses this information to adjust the variable valve. (Column 9, lines 26-52.) Both feed-forward and feed-back control systems are used. (Note column 10, lines -9 and lines 43-52.)" From 1<sup>st</sup> Office Action dated October 02, 2002.

The Applicants contend that Okada et al., (U.S. Patent 6,266,576) hereinafter "Okada et al." does not disclose or teach each of the elements of the invention as claimed in the instant application. While Okada et al. may disclose several similar elements of the system as claimed, in each instance outlined herein, Okada et al. does not disclose the claimed elements.

To anticipate a claim under 35 U.S.C. §102, a single source must contain all of the elements of the claim. Lewmar Marine Inc. v. Barient, Inc., 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

With regard to Claims 1, 43, and 50, Applicants contend that Okada et al. does not disclose or teach, "receiving a controllable valve position signal from a controllable valve." Nor does Okada et al. disclose or teach "actuating a controllable valve in response to ... said controllable valve position signal." The Examiner has further suggested that the pressure regulator 11 of Okada et al. is a controllable valve as claimed in the instant invention. The Applicants disagree. The pressure regulator 11 taught by Okada et al is just that, a regulator. There is no teaching that the valve apparatus of the pressure regulator 11 is controllable by the electric generation managing means 7 taught therein. In fact, it is not. The pressure regulator 11 can only respond to the output pressure sensed thereby. In addition, there is no teaching in Okada et al., that the pressure regulator 11 includes a position sensor to provide position feedback, nor does Okada et al. teach that the pressure regulator 11 is responsive to such a position. Moreover, there is no teaching in Okada et al. that the pressure regulator can be responsive to "a reformat pressure signal, a desired reformat pressure, and a controllable valve position signal" as claimed. On the contrary, the controllable valve of the claimed invention is controlled in response to a controllable valve position signal. Moreover the controllable valve is just that, controllable and responsive to a command signal. Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claims 1, 43, and 50. Thus, the rejections of Claims 1, 43, and 50 are improper and the rejections should be withdrawn.

Claims 2 - 22, 44 - 49, and 51 - 56 include the same limitations as Claims 1, 43, and 50 respectively and therefore, are allowable and improperly rejected. Thus, the rejection of Claims 2 - 22, 44 - 49, and 51 - 56 should be withdrawn. Moreover, Claims 2 - 22, 44 - 49, and 51 - 56 depend from Claims 1, 43, and 50 respectively, which are allowable, and thus are allowable as well.

With regard to Claim 3, Applicants contend that Okada et al. does not disclose or teach, "said actuating is in response to a desired controllable valve position value." Further, the pressure regulator 11 in Okada et al. is not responsive to a desired controllable valve position value. The pressure regulator is, at best, responsive to the output pressure. In fact, it is not even responsive to the input pressure, with the exception of attenuating the input pressure to the predetermined, non-modifiable, regulated value as fixed by the construction of the regulator 11. (See Col. 8, lines 43 - 46) Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claim 3. Thus, the rejection of Claim 3 is improper and the rejection should be withdrawn.

Claims 4, 5, 7, 8, and 9 include the same limitation as Claim 3 and therefore are allowable and improperly rejected. Thus, the rejections of Claims 4, 5, 7, 8, and 9 should be withdrawn. Moreover, Claims 4, 5, 7, 8, and 9 depend from Claim 3, which is allowable, and thus are allowable as well.

With regard to Claims 6, 45, and 52 Applicants contend that Okada et al. does not disclose or teach, "said actuating is responsive to a controllable valve position error." Nor does Okada et al. disclose or teach, "said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value." Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claims 6, 45, and 52. Thus, the rejections of Claims 6, 45, and 52 are improper and the rejections should be withdrawn.

With regard to Claims 10 - 11, 46, and 53, Applicants contend that Okada et al. does not disclose or teach "said actuating is responsive to a controllable valve command." Nor does Okada et al. disclose or teach, "said controllable valve command is responsive to a controllable valve position error." Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claims 10 - 11, 46, and 53. Thus, the rejections of Claim 10 - 11, 46, and 53 are improper and the rejections should be withdrawn.

Claims 12 - 16 include the same limitation as Claim 11 and therefore are allowable and improperly rejected. Thus, the rejection of claims 12 - 16 should be withdrawn. Moreover, Claims 12 - 16 depend from Claim 11, which is allowable, and thus are allowable as well.

With regard to Claims 17, 37, 47, and 54, Applicants contend that Okada et al. does not disclose or teach "receiving a metered reformat pressure signal representative of the metered reformat pressure." Nor does Okada et al. disclose or teach, "actuating said controllable valve in response to said ... metered reformat pressure signal,..." It should be noted that the "metered" reformat pressure as claimed is based on the pressure downstream of the controllable valve. Okada et al., does not disclose or teach measurement of a pressure signal downstream of the pressure regulator 11. Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claims 17, 37, 47, and 54. Thus, the rejections of Claims 17, 47, and 54 are improper and the rejections should be withdrawn.

Claims 18 - 22, 48 - 49, and 55 - 56 include the same limitation as Claim 17, 47, and 54 respectively and therefore are allowable and improperly rejected. Thus, the rejection of Claims 18 - 22, 48 - 49, and 55 - 56 should be withdrawn. Moreover, Claims 18 - 22, 48 - 49, and 55 - 56 depend from Claims 17, 47, and 54 respectively which are allowable, and thus are allowable as well.

Similarly, with regard to Claims 23, Applicants contend that Okada et al. does not disclose or teach, "said controller receives a controllable valve position signal from said controllable valve." Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claim 23. Thus, the rejection of Claim 23 is improper and the rejection should be withdrawn.

Likewise, Claims 24 - 42 include the same limitations as Claim 23 and therefore, are allowable and improperly rejected. Thus, the rejection of Claims 24 - 42 should be withdrawn. Moreover, Claims 24 - 42 depend from Claim 23, which is allowable, and thus are allowable as well.

With regard to Claim 25, Applicants contend that Okada et al. does not disclose or teach, "said controllable valve command is in response to a desired controllable valve position value." Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate the claim. Thus, the rejection of Claim 25 is improper and the rejection should be withdrawn.

Claims 26 and 27 include the same limitation as Claim 25 and therefore are allowable and improperly rejected. Thus, the rejections of Claims 26 and 27 should be withdrawn. Moreover, Claims 26 and 27 depend from Claim 25, which is allowable, and thus are allowable as well.

With regard to Claim 28, Applicants contend that Okada et al. does not disclose or teach, "said controllable valve command is responsive to a controllable valve position error." Nor does Okada et al. disclose or teach, "said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value." Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claim 28. Thus, the rejection of Claim 28 is improper and the rejection should be withdrawn.

With regard to Claims 31 and 32, Applicants contend that Okada et al. does not disclose or teach, "said controllable valve command is responsive to a controllable valve position error." Nor does Okada et al. disclose or teach, "said controllable valve command is reduced if said controllable valve position error signal is greater than a first position error threshold and increased if said controllable valve position error signal is less than a second position error threshold." Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claims 31 and 32. Thus, the rejections of Claim 31 and 32 are improper and the rejections should be withdrawn.

Claims 33 - 36 include the same limitations as Claim 31 and therefore are allowable and improperly rejected. Thus, the rejection of claims 33 - 36 should be withdrawn. Moreover, Claims 33 - 36 depend from Claim 31, which is allowable, and thus are allowable as well.

With regard to Claim 37, Applicants contend that Okada et al. does not disclose or teach "a metered reformate pressure sensor coupled to said controller and configured to measure reformate pressure at said electrochemical cell." Nor does Okada et al. disclose or teach, "...said controllable valve command is also responsive to said metered reformate pressure signal." Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot anticipate Claim 37. Thus, the rejection of Claim 37 is improper and the rejection should be withdrawn.

Claims 38 -- 42 include the same limitation as Claim 37 and therefore are allowable and improperly rejected. Thus, the rejections of Claims 38 - 42 should be withdrawn.

Moreover, Claims 38 – 42 depend from Claim 37, which is allowable, and thus are allowable as well.

**B. Claims 43 - 56 are not obvious in view of Okada et al.**

Claims 43 - 56 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. U. S. Patent No. 6,266,576.

Applicants respectfully contend for the reasons identified above that the Okada et al. does not disclose or teach one or more of the elements claimed and therefore cannot render the claims unpatentable.

Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). Further, even assuming that all elements of an invention are disclosed in the prior art, an Examiner cannot establish obviousness by locating references that describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would have impelled one skilled in the art to do what the patent applicant has done. *Ex parte Levengood*, 28 U.S.P.Q. 1300 (Bd. Pat. App. Int. 1993). The references, when viewed by themselves and not in retrospect, must suggest the invention. *In Re Skoll*, 187 U.S.P.Q. 481 (C.C.P.A. 1975).

Applicants respectfully contend for the reasons identified above that the Okada et al. does not disclose or teach one or more of the elements claimed and therefore cannot render the claims unpatentable. Therefore, because Okada et al. does not disclose or teach an element of the claimed invention, it cannot render Claims 43 – 56 unpatentable. Thus, the rejections of Claims 43 - 56 are improper and the rejections should be withdrawn.

**C. The claimed elements of the invention are not inherent in Okada et al.**

To refute to the arguments raised in response to the 1<sup>st</sup> Office Action dated October 02, 2002, the Final Office Action explanation suggests, that the elements cited to traverse the rejection are inherent in Okada et al. Applicants respectfully disagree. Applicants further contend that the Final Office Action does not provide the required justification that the element relied upon is necessarily present in the cited art.

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present** in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency however, may not be established by probabilities or possibilities. The mere fact that a certain thing **may** result from a give set of circumstances **is not sufficient.**' " (Emphasis Added) In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-1 (Fed Cir. 1999). MPEP §2112

Applicant's contend that the explanation in the Final Office Action stating that: "The control system inherently requires receipt of a signal corresponding to the position of the controllable valve in order to operate." mischaracterizes the teachings of Okada et al. and further, is not supported by any evidence to indicate that the missing descriptive matter is **necessarily present** in the teachings of Okada et al. For example, Okada et al. does not necessarily include a controllable valve position signal. Applicants contend that the Examiner's assertion is in error. A "signal corresponding to the position of the controllable valve" is not included, taught, or required by Okada et al. Okada et al. teaches a pressure regulator. Pressure regulators do not require or utilize "a signal indicative of the position of the valve to operate". As suggested during the telephone interview, it should be appreciated, that a pressure regulator will place the valve element in *any* position required to result in the regulated pressure at the output. This is most akin to a closed loop control on output pressure, not a closed loop control responsive to position as the Examiner suggests. The position of the valve is not necessary or required in Okada et al., therefore the Examiner has not met the necessary burden of proof for a showing of inherency. Thus, the rejection based upon an assertion of inherency is improper and should be withdrawn. Therefore, Claims 1, 43, and 50 are allowable.

With respect to Claim 3, the Examiner in the Final Office Action states: "that the process of 'actuating a controllable valve in response to a desired controllable valve position value' describes adjusting the flow through a valve, which is inherent to the okada et al. disclosure." Applicants contend once again that the Examiner has not satisfied the burden of proof for showing of inherency as prescribed by *In re Robertson*. The explanation in the Final Office Action provides no showing that Okada et al. necessarily includes the element "said actuating is in response to a desired controllable valve position value." In fact, as stated earlier the pressure regulator 11 in Okada et al. is not responsive to a desired controllable valve position value. Therefore, because the element cited is not necessarily present in



Okada et al. the Examiner has not met the burden of proof for inherency. Thus, the rejection of Claim 3 is improper and the rejection should be withdrawn.

With regard to Claims 6, 45, and 52 Applicants contend that Okada et al. does not disclose or teach, "said actuating is responsive to a controllable valve position error." Nor does Okada et al. disclose or teach, "said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value." With regard to Claims 10 - 11, 46, and 53, Applicants contend that Okada et al. does not disclose or teach, "said actuating is responsive to a controllable valve command." Nor does Okada et al. disclose or teach, "said controllable valve command is responsive to a controllable valve position error." The Examiner in the Final Office Action states: "However, Okada et al. disclose closed-loop feed-forward and feed-back control systems. Closed loop control systems compare a desired value of a parameter (e.g. valve position) with a deviation or error in the measured value(d) of that parameter. Note (Citing Perry)...The disclosure by Okada et al. of control systems inherently discloses applicants claim limitations require valve position adjustment in response to valve position errors."

Applicants contend once again, that the Examiner has not satisfied the burden of proof for showing of inherency as prescribed by *In re Robertson*. The explanation in the Final Office Action provides no showing that Okada et al. necessarily includes the element "said controllable valve position error is responsive to the difference between a controllable valve position signal and a desired controllable valve position value." Nor as the Final Office Action provided any showing of the elements "said actuating is responsive to a controllable valve command." nor "said controllable valve command is responsive to a controllable valve position error."

In addition, contrary to the Examiner's assertion, just because Okada et al. discloses a "closed-loop feed-forward and feed-back control systems" and Perry teaches that "Closed loop control systems compare a desired value of a parameter (e.g. valve position) with a deviation or error in the measured value (d) of that parameter." It does not follow that Okada et al. necessarily includes the claim limitation as required by *In re Robertson*. For example, there is no evidence presented that the closed loop system of Okada et al includes a loop closure based on a valve position signal. In fact, quite the contrary, the loop closures disclosed in Okada et al. do not include any such reference to valve position. The loop closures disclosed are based on the required electricity and thereby the fuel supplied to the

reformer. In fact, there is no closed loop control of the reformate supplied to the fuel cell based on the valve position of the controllable valve as in the claimed invention.

Therefore, because the elements cited is not necessarily present in Okada et al. the Examiner has not met the burden of proof for inherency. Thus, the rejections of Claims 6, 45, and 52 are improper and the rejection should be withdrawn. Following similar reasoning, the rejections of Claims 10 - 11, 46, and 53 are improper and the rejection should be withdrawn.

#### **D. Conclusion**

For the reasons cited above, Applicants respectfully submit that this application is in condition for allowance and request withdrawal of the outstanding rejections and early allowance of this application. It is believed that the foregoing remarks are fully responsive to the Office Action and that the claims herein should be allowable to the Applicants.

The claims were not amended to overcome the prior art and therefore, no presumption should attach that either the claims have been narrowed over those earlier presented, or that subject matter or equivalents thereof to which the Applicants are entitled has been surrendered. No new matter has been introduced. Consideration and allowance of the claims is respectfully requested in view of the preceeding remarks.

In the event the Examiner has any queries regarding the submitted arguments, the undersigned respectfully requests the courtesy of a telephone conference to discuss any matters in need of attention.

If there are additional charges with respect to this matter or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully Submitted,

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